



PROPOSAL

# REGIONAL TREATMENT PLANT PRIMARY AND AERATION AREA GRATING AND GATES REPLACEMENT

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**SOUTH ORANGE COUNTY WASTEWATER AUTHORITY**  
APRIL 25, 2024

605 Third Street / Encinitas, CA 92024 / 760.942.5147

**DUDEK**



# Cover Letter

April 25, 2024

Jeanette Cotinola, CPCM  
 Procurement/Contracts Manager  
 South Orange County Wastewater Authority  
 34156 Del Obispo Street  
 Dana Point, CA 92629

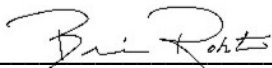
**Subject: Proposal for Regional Treatment Plant (RTP) Primary and Aeration Area Grating and Gates Replacement**

Dear Jeanette Cotinola:

Dudek is pleased to submit this proposal for the above-referenced project. Our proposal demonstrates our team's informed approach to the SOCWA RTP primary and aeration area grating and gates replacement. Led by Michael Metts and Brian Robertson, with support from internal staff and subconsultant specialists, our team includes industry leaders with project-specific engineering knowledge related to primary and secondary process improvements, structural improvements, plant operations, and more.

Should you have any questions or require additional information, please do not hesitate to contact Project Manager Brian Robertson at 760.479.4845 or brobertson@dudek.com. We value our relationship with SOCWA and look forward to assisting you with this project.

Sincerely,



**Brian Robertson, P.E., QSD**  
 Project Manager



**Bob Ohlund, P.E.**  
 Vice President

*Bob Ohlund is authorized to sign on behalf of Dudek.*

DUDEK AT A GLANCE



Multidisciplinary design,  
 planning, engineering, and  
 environmental services

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800+	Founded in
EMPLOYEES	1980

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Employee-owned

CALIFORNIA CORPORATION

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TOP CALIFORNIA DESIGN FIRM NO. 53 <small>(Engineering News-Record)</small>	12
TOP 50 TRENCHLESS DESIGN FIRM <small>(Trenchless Technology)</small>	CALIFORNIA OFFICES

**SOUTH ORANGE COUNTY WASTEWATER AUTHORITY**

**ADDENDUM No. 1**

**TO REQUEST FOR PROPOSALS**

**FOR RTP Primary and Aeration Area Grating and Gates**

**THE PROPOSER SHALL EXECUTE THE CERTIFICATION AT THE END OF THE  
ADDENDUM AND SHALL ATTACH THE ADDENDUM TO THE PROPOSAL (NOT TO BE  
INCLUDED AS PART OF THE PAGE COUNT).**

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Revised Scope of Work attached hereto.

DATED: 3/4/2024

  
\_\_\_\_\_  
Jeanette Cotinola, CPCM

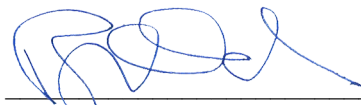
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**BIDDER'S CERTIFICATION**

I acknowledge receipt of the foregoing Addendum No. 1 and accept all conditions contained herein.

DATED: 4/25/2024

BIDDER:  
Dudek

BY:   
\_\_\_\_\_  
**Bob Ohlund, P.E.**  
**Vice President**

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## **APPENDIX**

A	Resumes
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# 1.3.1 Identification of Responder

## Dudek

Table 1 presents the SOCWA-requested responder information.

**Table 1. Dudek Information**

<b>Legal name, address and form (e.g., Corporation, LLP, etc.) of company</b>	Dudek Main Office   605 Third Street, Encinitas, CA 92024 A proud California Corporation since 1980   C1210012
<b>Identify any parent companies</b>	Dudek has no parent company
<b>Addresses of principal place of business and, if different, any local office</b>	Main Office   605 Third Street, Encinitas, CA 92024 Orange County   27271 Las Ramblas, Suite 340, Mission Viejo, CA 92691
<b>Name, title, phone, and email address of person to contact about the proposal</b>	Contact   Brian Robertson, PE, QSD, Project Manager Address   605 Third Street, Encinitas, CA 92024 Phone   760.479.4845 Email   brobertson@dudek.com

**DUDEK SERVICES**

<ul style="list-style-type: none"> <li>Agency Permitting</li> <li>Biological Surveys and Monitoring</li> <li>CEQA/NEPA Compliance</li> <li>Climate Action/Adaptation Plans</li> <li>Coastal Planning/Permitting</li> <li>Cultural Resources</li> <li>Civil Engineering</li> <li>Construction Management</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Planning</li> <li>Grant Management and Writing</li> <li>Habitat Restoration and Management</li> <li>Hazardous Materials Testing</li> <li>Hydrogeology</li> <li>Hydrology</li> <li>Mapping and Surveying</li> </ul>	<ul style="list-style-type: none"> <li>Public Outreach</li> <li>Urban Design and Planning</li> <li>Urban Forestry</li> <li>Wildfire Protection Planning</li> <li>Water Conservation Planning</li> <li>Water Infrastructure Planning and Design</li> <li>Visual Simulations</li> </ul>
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## 1.3.2 Approach to the Work

### Understanding

We understand that South Orange County Wastewater Authority (SOCWA) is requesting engineering services for the Regional Treatment Plant (RTP) Primary and Aeration Area Grating and Gates Replacement project (Project). The RTP was originally constructed in the early 1980s and has a secondary treatment design capacity of 12 million gallons per day (mgd). Elements of the primary and aeration facilities have experienced significant deterioration and are now in need of improvements in several key areas:

#### PRIMARY AREA GRATING

In the primary process area, there are typically 4'x3' steel diamond plated gratings that serve for odor control and access to and over the grit influent, grit effluent, and primary channels. A significant portion of this grating, approximately 260 feet, has been identified for replacement as they are heavy, corroded, and flex under foot traffic.

Recognizing these issues, SOCWA staff have implemented safety precautions such as, spot replacements, addition of plywood covers over the grating in high foot traffic areas and avoiding walking over the grating whenever possible. While these temporary solutions have mitigated some risks, they present their own challenges. The spot replacements, for instance, are labor-intensive and disrupt the workflow of operations and maintenance staff. The plywood covers provide temporary prevention of falls into the channels but introduce a tripping hazard. This is particularly concerning as there are routine maintenance activities in the area that require quick maneuvering within short process shutdown periods.



*Primary Area Grating*

#### PRIMARY AND AERATION AREA SLIDE PLATES

There are multiple steel influent and effluent slide plates for each of six primary tanks. The plate heights are long (i.e. 5'+/-) compared to the widths which are only 1' or less, a nonstandard size requiring custom fabrication for repairs and replacements. There also appears to be corrosion and/or settlement building along the sliding edges which makes removal/insertion challenging.

The aeration influent and effluent slide plates are larger or wider but have similar design and reported issues with severe corrosion along the galvanized steel bracing. Similar issues are anticipated for the return activated sludge (RAS) gates.

The effluent aeration slide plates are particularly problematic at Aeration Tank 5 and 6, as they are 5' long and multistage with 5 plates in a row (See Figure 1). There have been issues with these plates getting seized or stuck and their removal and



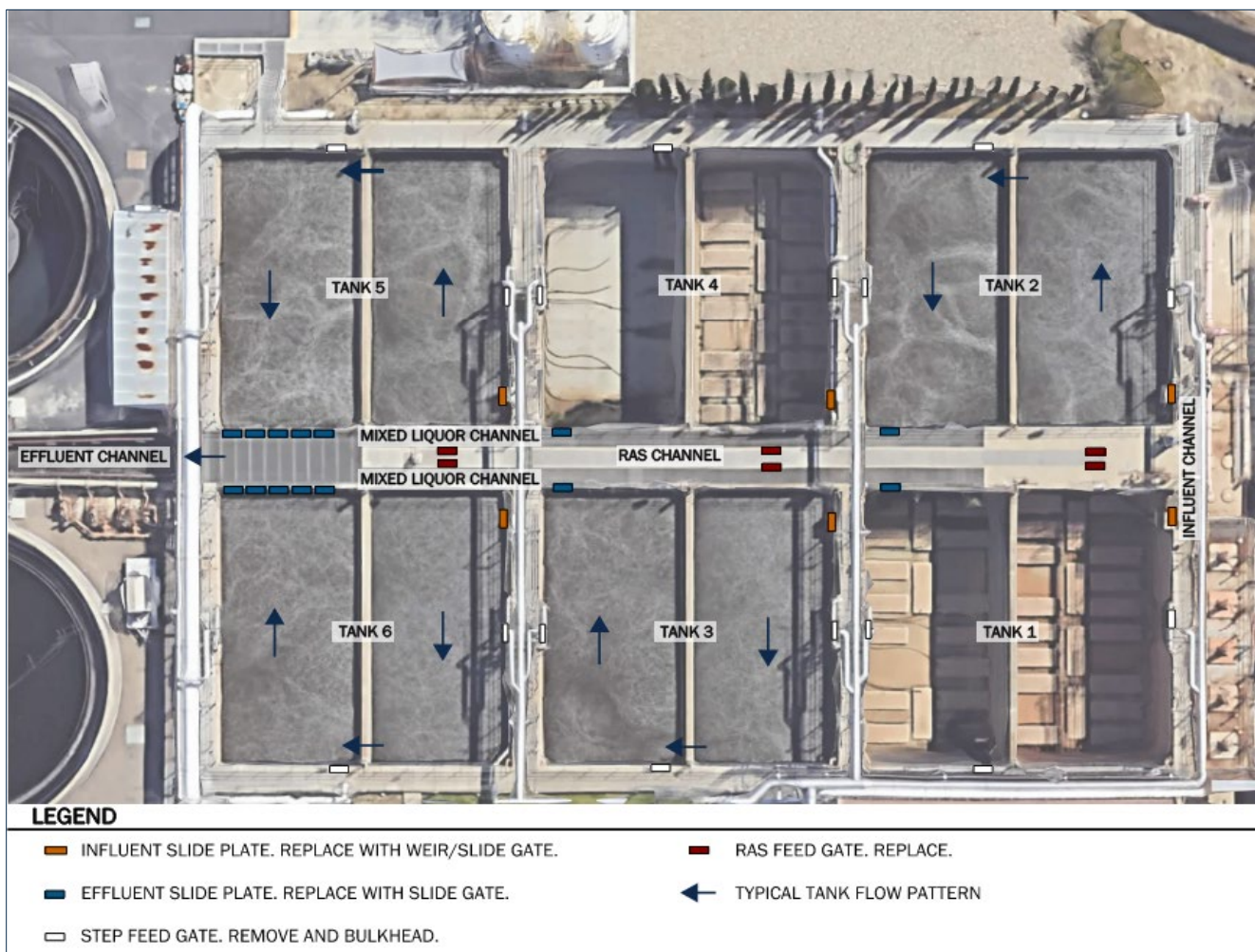
*Primary Area Slide Plates*

reinsertion require yearly exercising and a team of personnel employing unconventional methods, such as the use of a bottle jack, chain, and I-beam. However, some plates are so firmly stuck that they cannot be removed by staff. This situation interrupts workflow and poses a potential health and safety risk due to weight and lack of permanent gate actuator equipment.

**STEP FEED GATES**

The existing aeration tanks are currently operating in parallel with a serpentine flow pattern. Step feed operation has been discontinued, so the existing step feed gates are to be removed and the openings are to be sealed with blukhead system such as doweled in concrete or metal plating with gaskets.

*Figure 1. SOCWA Regional Treatment Plant Aeration Area*



After meeting with SOCWA project management and operations staff, we understand that SOCWA is looking for a robust solution to address existing challenges with health and safety conditions and disruptions to staff time and resource allocation. Given these circumstances, a new permanent grating solution is needed, not only to prevent tripping and falling but also to address the corrosive conditions and repairs to the grating support structures and sealing for odor control. New slide gates with manual operators are needed to increase the reliability of the primary and aeration facilities and accommodate safe access for exercising the gates and cycling tank outages for future maintenance and improvement work.



## Approach

Dudek's engineering philosophy is to be an extension and partner for SOCWA in the development of the proposed project. During preliminary design, we seek to bring ideas to the table with a list of pros and cons and workshop those ideas with key SOCWA staff so that their deep understanding of operational needs, capabilities, and risks can be filtered through the proposed options to select the preferred approach. The following sections outline our more detailed technical approach to the project and discuss preliminary options and considerations.

Based on our understanding of the proposed project, several key design focus areas are identified and discussed in the sections below, including:

- Slide Gate Design and Selection
- Maintenance of Plant Operation During Construction
- Structural Considerations

### SLIDE GATE DESIGN AND SELECTION

One of the most important outcomes of the project is to select and size slide gate equipment that provides a robust and reliable isolating and conveying solution for SOCWA long-term, minimizing the need for staff to perform unscheduled maintenance and repairs to the equipment and simplify the process for regular exercising of the gates. Our approach is to work collaboratively with qualified slide gate manufacturers (e.g., Waterman, RW Gate, Fontaine Aquanox) and SOCWA staff to understand space and configuration constraints and develop pros and cons and a consensus recommendation for the size, hoist type (e.g., handwheel, handcrank, square nut), material type (e.g., stainless steel 316 or aluminum), and upward or downward opening configuration.

In the initial design phase, we will explore the feasibility of introducing new, standard-sized weir/slide gates with reduced height to enhance cost-effectiveness and lifting access for the primary area gates. Likewise, for the gates of Aeration Tanks 5 and 6, we will seek ways to optimize the gate system, possibly by implementing fewer new gates as opposed to a complete replacement of all 5 gates.

Another important task during preliminary design is to develop and evaluate alternative slide gate mounting locations, to the tank concrete walls and platform framing or within the existing concrete openings for the slide plates and/or decking area, and identify the impacts to the adjacent structures, utilities, odor boxes, baffles, etc.

### MAINTENANCE OF PLANT OPERATION DURING CONSTRUCTION

The 24/7 operation of the primary and aeration facilities is crucial, and any prolonged shutdowns can pose significant challenges for plant staff in managing the flows and treatment performance regulatory risk. Maintaining operations during construction is a key concern as the replacement of stop plates with weir and slide gates will cause extended disruption. Our design team will work with plant operations staff to establish acceptable shutdown periods and procedures, and to define responsibilities between the design team, contractor and SOCWA staff.

Our preliminary strategy for maintaining plant operation during construction involves leveraging the redundancy of the existing system and isolation equipment. We plan to develop a suggested sequence of work considering partial shutdown (e.g. no more than 2 primary or aeration tanks outages at a time) and use of temporary bulkheads in the perimeter channels to passively bypass and reduce the need for temporary bypass pumping and

its associated spill risk and additional costs. We will also explore design opportunities that allow the installation of new slide gates around the stop plates, with the existing plates serving as isolation, to further minimize the need for temporary bypass equipment.

Our initial review indicates that installing new slide gates for Aeration Tank 5 and 6 may require special attention. These tanks are where interior channels outlet and come in with the aeration tank flow. If the water level in the tanks cannot be drawn down or alternative ideas, such as the installation of temporary coffer dams, prove impractical, bypass pumping may be necessary at this location. We will workshop ideas, such as identifying use of one of the existing Godwin diesel backup pumps for the interstage pumps as a contingency measure during construction.

Our field discussions have revealed that the operations staff have ideas specific to this project on how to isolate the primary and aeration tanks and maintain feed to the interstage pumps. We intend to utilize these insights along with our findings and recommendations and incorporate them into phasing exhibits to foster workshop discussions and obtain consensus that leads to well-defined work restrictions and sequencing guidance in the bid documents that enable SOCWA staff to mitigate construction risks and avoid change orders or conflicts with other concurrent work at the plant.

## STRUCTURAL CONSIDERATIONS

Rehabilitation of the Primary and Aeration areas will likely consist of various concrete surface repairs, grating replacement with a more resilient material such as stainless-steel or fiber-reinforced polymer (FRP), gate and equipment frame replacement, anchor bolt replacement, and replacement or modification of impacted utility structures (i.e. pipe supports; odor boxes). The extent of structure deterioration and required repairs will be determined during a site investigation to the extent possible while the areas are in operation. Anticipated repairs include concrete resurfacing by means of epoxy repair mortar, corrosion inhibitors on exposed and/or corroding reinforcement, replacement of nonstructural embeds, frames and supports with 316 stainless steel construction and new 316 stainless steel anchor bolts for all equipment and attachments.

## Scope of Services

Tasks are to include the following per the RFP requirements. Dudek's assumptions, clarifications, and recommendations to enhance the scope of work are included below each scope item in *blue italics*:

- I. *Project Management and Progress Meetings.* FIRM shall conduct virtual or in-person monthly progress meetings with SOCWA staff. The primary purpose of the meetings is to review schedule, task progress, and outstanding action items. The FIRM shall prepare the agenda, the action item list, and the decision log for each meeting. FIRM shall plan for a maximum of 9 progress meetings. The kickoff meeting will be conducted in person at the Regional Treatment Plant. For more details on progress meetings please see RFP section 1.7.
- II. *Data Collection and Document Review.* SOCWA will provide the FIRM with available record drawings and previous studies.
  - *Previous site survey and record drawing CAD base files will be provided for Dudek use and field or aerial survey is not needed for the project. CAD basemaps generally cover the entire*

*primary and secondary areas. Minor updates to the base files are needed based on findings from field verification and measurements.*

- *Complete sets of the record drawings will be provided.*

III. *Design Workshop.* This workshop shall include bypass/sequencing concept plan, and also including gates alternative analysis. SOCWA will take four weeks to review the submittal and return comments. FIRM shall prepare an implementation plan showing how work can be done while maintaining the facility in service.

- *Deliverable: Preliminary Design Memo to document the following:*
  - *Bypass and sequencing concept plan description and accompanying exhibits.*
  - *Summary of key discussions and consensus recommendations for implementation of grating and gate replacements.*
  - *Summary of design criteria, concepts, and approach to final design.*
  - *Preliminary construction cost estimate.*
- *The design workshop will include summary of grating and grate type alternatives development concepts and evaluation. This will be presented in table or slide deck format and included as an attachment to the Preliminary Design Memo.*

IV. *50% Submittal.* This submittal shall address all SOCWA's comments from the Design Workshop. This submittal shall also include comments returned from the Design Workshop with the completed plans, specifications, and cost estimate. SOCWA will take four weeks to review the submittal and return comments.

- *There are 12 primary influent gates and 18 primary effluent gates that will be replaced with slide or weir gates with manual operators.*
- *All work shall conform to the California Building Code (CBC) latest edition and its referenced code documents.*
- *Structural condition assessment is needed but will not require process shutdowns or confined space entry, and destructive methods shall not be performed.*
- *Seismic design/retrofit of the existing Primary or Aeration areas will not be provided.*
- *It is assumed that the new slide gates will not require modifications to major structural members (i.e. concrete beams; walkway platform framing).*
- *It is assumed that required concrete repairs are localized to areas immediately adjacent to deteriorated grating and gates. Extensive structural rehabilitation beyond these areas is not included as part of the Scope of Work. If extensive structural damage is identified during the site investigations, Dudek shall notify SOCWA and an amendment may be developed to address the design of additional concrete repairs.*



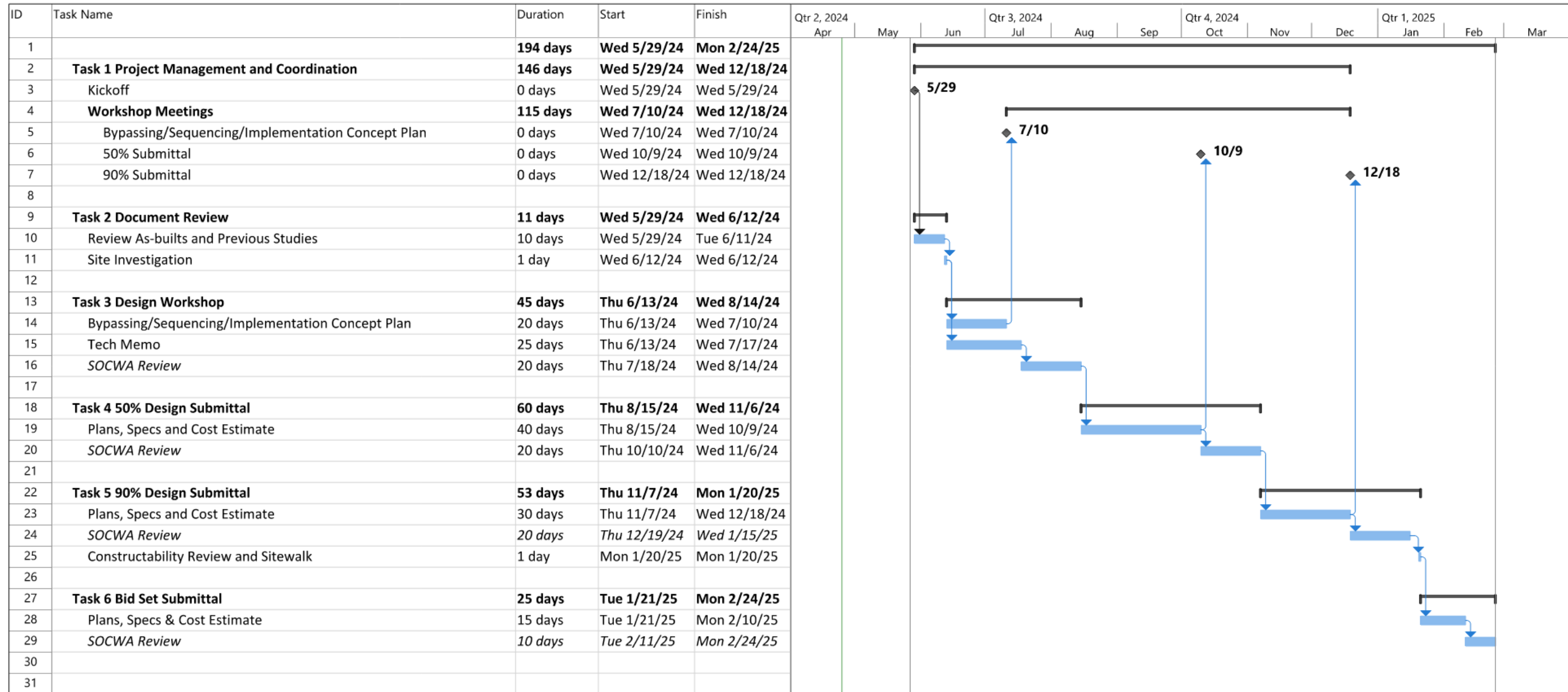
- *The project will not impact electrical facilities; electrical engineering services are not needed.*
- *The estimated drawing list is summarized in **Table 2**. We assume that construction sequencing, work restriction, and bypass plan will primarily be addressed in the specifications along with notes and an overall plan on one drawing sheet for each process area (G-5 and G-6). Multiple drawing sheets to identify construction sequencing for each process area are not needed. Preparation of a detailed sequencing plan for the project will be a specification requirement for the contractor to prepare.*

**Table 2. Estimated Drawing List**

No.	Sheet No.	Sheet Name
1	G-1	Title Sheet, Vicinity Map
2	G-2	General Notes and Drawing Index
3	G-3	Symbols, Abbreviations, and Schedules
4	G-4	Overall Site Plan and Contractor Staging Area
5	G-5	Primary Area Maintenance of Plant Operation / Phasing Plan
6	G-6	Aeration Area Maintenance of Plant Operation / Phasing Plan
7	D-1	Primary Area Structural Demolition Plan
8	D-2	Aeration Area Structural Demolition Plan
9	D-3	Demolitions Details - 1
10	D-3	Demolitions Details - 2
11	S-1	Structural General Notes - 1
12	S-2	Structural General Notes - 2
13	S-3	Special Inspections and Notes
14	S-5	Primary Area Structural Repair Plan
15	S-6	Primary Area Structural Repair Sections
16	S-8	Aeration Area Structural Repair Plan
17	S-9	Aeration Area Structural Repair Sections
18	S-10	Structural Typical Details - 1
19	S-11	Structural Typical Details - 2
20	S-12	Structural Details - 1
21	S-13	Structural Details - 2
22	M-1	Symbols, Legend & Abbreviations
23	M-2	Primary Area Mechanical Plan
24	M-3	Primary Area Mechanical Sections
25	M-4	Aeration Area Mechanical Plan
26	M-5	Aeration Area Mechanical Sections
27	M-6	Mechanical Typical Details
28	M-7	Mechanical Details

- V. *90% Submittal.* The 90% submittal shall address all SOCWA's comments from the 50% submittal. This submittal shall also include the same elements as the 50% submittal with the completed plans, specifications, and cost estimate. SOCWA will take four weeks to review the submittal and return comments.
- *Refer to assumptions for 50% submittal.*
- VI. *Constructability Review.* This shall be in person and a site walk shall be made prior to discussions on Bid Set of documents.
- *Constructability review will be conducted after SOCWA provides review comments on 90% submittal.*
- VII. *Bid Set.* FIRM shall provide the complete bid set with the completed plans, specifications, and cost estimate. This Bid Set shall include SOCWA's comments from the Design Workshop, 50% Submittal, 90% Submittal and constructability review.
- *Bid support services and preparation of a conformed set of drawings and specifications will be provided separately if needed. Construction support services will be provided separately if needed.*
- VIII. *Technical Specifications.* SOCWA will provide the FIRM with the listing of standard specifications from Division 1 to be used for the project after the 50% submittals review. FIRM is responsible for preparing Section 01010, Summary of Work and Section 01014, Work Restrictions and Sequence. FIRM shall meet with SOCWA to discuss coordination of specifications sections referenced in the technical specifications. FIRM shall submit required information for review at the 90% submittal.
- IX. *Construction Sequencing and Bypass Plan.* FIRM shall evaluate the need to bypass the influent channel for the grit grating work. Bypass of the primary effluent channel and the ability to feed the interstage pumps. The minimum number of tanks in service and sequence to stagger the work between each tank are some examples of the sequence and bypass.

Figure 2. Work Schedule





## Project Management and Quality Control

**Regular Project Meetings.** We utilize regularly scheduled meetings with the project team, SOCWA staff, and subconsultants to keep all parties apprised of the project's status. All meetings include an agenda prepared by the Dudek project manager and are documented through meeting minutes, with action items clearly identified.

**In-Person Meetings, Collaboration, and Technology.** The Dudek team offers many tools for efficient and productive in-person and virtual collaboration with the Authority. These include in-person and virtual meetings using Microsoft Teams or Zoom, file sharing/storage via ShareFile, document coauthoring through SharePoint, and client web portals.

Our project teams also utilize collaborative PM software tools that provide real-time task tracking, updates, and communication to reduce the risk of tasks slipping through the cracks, being overlooked, or falling behind schedule.

**Scope Definition, Budget, and Schedule.** We will work with the Authority to develop the appropriate scope of services to accomplish project goals and objectives, schedules, budgets, and work products. In particular, Dudek understands and appreciates the importance of managing project scope changes and the schedule. Where project changes may disrupt the scope and/or schedule, Dudek documents these changes in a change management log, which is shared with the Authority each month if changes materialize. The change management log includes a summary of the change, the driver for the change, documentation of the date and correspondence for the change, and an estimation of how the change will impact the project's scope, schedule and/or budget.

Proactively managing the project scope, budget, and schedule is critical to the success of any project. Dudek consistently evaluates our project manager's performance based on measurable criteria and provides training, coaching, and mentorship programs to support our project managers. Your success is our success, and our commitment to providing the best training, tools, and resources to our project managers is a key reason our projects outperform other firms in the industry.



**Subconsultant Agreements.** A well-managed project benefits from frequent, documented communication between all project team members, including subconsultants. We initiate this process with insurance certificates and detailed written scopes of services, schedules, and budgets.

**Quality Assurance and Quality Control.** Quality assurance is the responsibility of **ensuring the conduct of proper** quality control reviews. Quality assurance is a project management responsibility conducted **following** either the standard quality control practice or a specifically documented quality control plan. For major milestone deliverables, Dudek project managers assign the quality control review to a principal-level engineer who is familiar with the unique aspects or technology related to the project. For this project, the Dudek project manager will assign each deliverable for QC review with an appropriate principal-level engineer to perform review and comment to be incorporated **before** submittal to the Authority.



- COMMUNICATIONS**
  - » Single point of contact
  - » Kickoff meeting to set project course
  - » Responsive, consistent communication
- PROJECT WORKFLOW**
  - » Master deliverables list
  - » Schedule tracking
  - » Budget tracking
  - » Quality assurance process
- COLLABORATION TOOLS**
  - » Secure project portals
  - » Custom websites
  - » Virtual meetings
  - » Mobile data collection

# 1.3.3 Experience and Technical Competence

Dudek engineers are recognized experts in the design of wastewater treatment facilities. Our referenced engineering projects are chosen specifically for project similarities and team member involvement. Similarities to the Authority's project include:

## HUSTON CREEK WASTEWATER TREATMENT PLANT PRIMARY CLARIFIER AND DEWATERING BUILDING IMPROVEMENTS

- Client:** Crestline Sanitation District
- Reference:** Rick Dever, District Manager, 909.338.1751
- Period of Performance:** 1/10/2019 – 5/21/2021
- Proposed Key Personnel:** Brian Robertson, Greg Guillen, Agata Bugala

Dudek has completed bid packages and is nearing completion of construction support for a new two-story biosolids dewatering building and primary clarifier for Crestline Sanitation District's 1.0 MGD Huston Creek WWTP. Project includes new structures, process equipment, pumps, primary influent channels and slide gates, electrical systems, a new emergency generator, and more. Project topography required careful structural design along with maintenance of plant operations planning to support new facilities. Project completion will provide the District with improved reliability and performance of the facility for regulatory compliance, mitigated health and safety concerns, and reduced O&M costs.



## SAN LUIS REY WATER RECLAMATION FACILITY MAJOR UPGRADES PROJECT

- Client:** City of Oceanside
- Client Reference:** Mabel Uyeda, P.E., Principal Water Engineer, 760.479.4107
- Period of Performance:** 12/3/2014 – 9/30/2016
- Dudek Team Members:** Justin Scheidel

Dudek was contracted to perform services for a series of improvement projects including developing plans for replacement of aeration basin slide gates, relining the aeration basin influent channel and demolition of abandoned piping and conduits for the 15.4-million-gallon-per-day treatment facility. Design involved working closely with operations staff to develop construction phasing plans that reduced bypass pumping costs while maintaining plant operations during construction. Project provides operations staff with treatment flexibility and optimization while reducing energy costs and facilitating maintenance operations.





**WATER RECLAMATION FACILITY 1 AERATION SYSTEM IMPROVEMENTS PROJECT**

**Client:** City of Corona  
**Client Reference:** Alan Zhang, 951.736.2236  
**Period of Performance:** 7/1/2021 – Ongoing  
**Dudek Team Members:** Brian Robertson, Greg Guillen, Agata Bugala

Dudek was contracted by the City of Corona for a new air piping supply and diffuser system for Aeration Basins 1, 2, and 3 at WRF-1A. Detailed design elements included replacing the existing air piping below grade and deck with a new pipe bridge and overhead pipe support system for a new 20” and 12” air piping system with motor operated valves, and flows meters. Design also included development of a phasing plan to maintain air supply and keep 2 of the 3 basins in service during construction and basins upgrades including replacement of the influent and effluent slide gates, replacement of mud valves, new retrievable fine bubble tube diffusers, and supporting electrical control panel and wiring. Dudek is currently providing engineering support during construction services.



**SANTA MARIA WASTEWATER TREATMENT PLANT HEADWORKS UPGRADE PROJECT**

**Client:** Ramona Municipal Water District  
**Client Reference:** Erica Wolski, General Manager; 760.789.1330  
**Period of Performance:** 3/28/2017 – Ongoing  
**Dudek Team Members:** Michael Metts, Brian Robertson, Justin Scheidel, Agata Bugala

In 1981, the Ramona Municipal Water District (District) took ownership of the Santa Maria Wastewater Treatment Plant (SMWWTP) from the County of San Diego. In 1995, the Regional Water Quality Control Board approved the expansion of the SMWWTP to a capacity of 1.0 mgd. Since construction, the SMWWTP has not included preliminary treatment. Influent flow is lifted into influent equalization basins before conveyance to the secondary treatment process. The influent pump station has experienced significant ragging challenges, and the equalization basins are regularly taken offline to remove grit accumulation. Dudek designed a new influent lift station utilizing Archimedes-style screw pumps to eliminate ragging concerns, a new headworks structure with channels, slide gates, mechanical screening with sluice and wash/press, a vortex grit chamber with grit pumps and classifier, and an influent flow meter. The design also included relocating the main influent trunk sewer and influent force main to the new headworks facility. Also, a standby generator was designed to provide critical backup power for reliability and uninterrupted operation.





**4S RANCH WRF HEADWORKS SCREENING SYSTEM IMPROVEMENTS**

**Client:** Olivenhain Municipal Water District

**Client Reference:** Lindsey Stephenson, Engineering Manager, 760.753.6466

**Period of Performance:** 5/21/2021 - Ongoing

**Dudek Team Members:** Brian Robertson, Michael Metts, Greg Guillen, Agata Bugala

OMWD contracted with Dudek to provide design services for the headworks screening system improvements project. The project will replace the aging mechanical screen and bypass bar rack with two new Parkson AquaGuard mechanical screens, wash-presses, and associated instrumentation and control systems. The scope also includes rehabilitating influent channels and new epoxy liners, replacement of slide gates, odor control improvements, building modifications and access improvements, a new grit classifier, and more. Key project challenges include the existing building's tight space and working conditions and the need for raw influent bypass pumping. During the design, the District also added scope for miscellaneous improvements in the WRF, such as high flow and off-spec diversion pumping and yard piping, to improve operational reliability and emergency contingency measures. The design is currently 90% complete and is scheduled for construction in FY 2024-2025.



## 1.3.4 Key Personnel and Subconsultants

Dudek will serve as the prime consultant providing overall management and engineering services. **Brian Robertson, PE, QSD**, will serve as your dedicated project manager and the main point of contact for SOCWA. He is a successful project manager with sixteen years of experience providing wastewater infrastructure design and rehabilitation to similar clients. Mr. Robertson will oversee the development and execution of the tasks / projects, tracking budgets and schedules. He understands the importance of good communication, being solution-oriented, and efficient multitasking. He will facilitate the flow of information among the team and with the District's project manager. Supporting Mr. Robertson will be **Michael Metts, PE**, serving as principal in charge. Mr. Metts has 40 years of experience managing, planning, and designing water infrastructure projects throughout California and serves as Dudek's Chief Engineer. **Justin Scheidel, PE**, will provide expert project quality control. He will thoroughly review all deliverables before delivery to the Authority, including those of our sub-consultants.

For this project, Dudek will supplement our team with the services of Kelsey Structural - a firm with whom we have a long-term relationship. Matt Stone, PE, SE of Kelsey Structural will provide structural engineering services. Mr. Stone recently provided structural services for SOCWA's JBL Digester 1 and 2 Manway Access Improvements Design.

We understand that the Authority is considering the Dudek team in its entirety; therefore, we will not make changes in team composition, including the Project Manager, without prior consultation and written approval from the Authority.

**Figure 3** illustrates the team organization and lines of communication. Brief biographies for key personnel follow. Focused resumes are provided in **Appendix A**.

**Current and Future Workload of Key Staff.** We have reviewed the scope of work requirements and have carefully selected a talented, collaborative project team personnel with the capabilities and perseverance to satisfy the needs of the District's contract while meeting the performance schedule. Dudek routinely works on projects of similar scope and scale with public agencies, and we are experts in effectively balancing staff resources and workloads to service your contract. Michael Metts and Brian Robertson will ensure the availability and allocation of staff resources to this contract.

*Figure 3. Project Organization Chart*





**Michael Metts, PE**  
Principal in Charge

*Qualifications*

- 40 years of experience in water, wastewater, and recycled water engineering design, permitting, water resources planning, and construction management and assistance
- Project experience encompasses the evaluation and expansion of existing facilities as well as the design of new facilities
- 20+ years serving as District Engineer for various water/wastewater districts
- Strong skills and proven history of tracking, monitoring, team delegation, deliverable quality assurance, engineering guidance, accounting, and subconsultant coordination

*Related Experience*

- District Engineer, Ramona Santa Maria WRF Headworks
- Principal Engineer, SEJPA WRF Headworks Upgrade
- Principal Engineer, Corona WRF1 and WRF 2 Headworks Upgrades
- Principal, CIP Engineering Services, South Orange County Wastewater Authority

*Education & License*

BS Civil Engineering  
Civil Engineer, CA No. 42586



**Brian Robertson, PE, QSD**  
Project Manager

*Qualifications*

- Project manager with 17 years' extensive experience in water, wastewater and drainage conveyance systems for cities and districts throughout Southern California
- Received recognition for his work preparing detailed analysis, reports, and PS&E
- Seamless coordination with team members, utilities, and essential governmental agencies.

*Related Experience*

- Project Manager, Digester Tank Improvements for La Salina Wastewater Treatment Plant, Oceanside Water Department
- Project Manager, WRF 1 Aeration System Improvements, City of Corona
- Lead Engineer, Huston Creek WWTP Dewatering Building and Primary Clarifier, Crestline Sanitation District
- Lead Engineer, Santa Maria WRF Headworks, Ramona Municipal Water District
- Senior Engineer, 4S Ranch WRF Headworks Screening System Improvements, Olivenhain MWD

*Education & License*

BS Civil Engineering  
CA PE C77990  
Certified QSD



**Gregory Guillen, PE**  
Process Engineer

*Qualifications*

- Chemical and environmental engineer with 15 years' experience focused on water and wastewater treatment
- Expertise in advanced membrane materials and processes for separations, including those found in water and wastewater treatment
- Authored several peer-reviewed papers in the field of desalination and membrane filtration
- Holds multiple patents for membrane formation

*Related Experience*

- Lead Process Engineer, Santa Maria WRF Headworks, Ramona Municipal Water District
- Lead Process Engineer, 4S Ranch Water Reclamation Facility Headworks Screenings System Improvements, Olivenhain Municipal Water District
- Process Engineer, Woods Valley Ranch Water Reclamation Facility Phase 2, Valley Center MWD
- Project Engineer, Pressurization and Odor Control Study, Orange County Sanitation District

*Education & License*

PhD, Civil Engineering  
MS, Civil Engineering  
BS Environmental Engineering  
Civil Engineer, CA No. 83897



**Table 3. Project Team Overview**

Name/Role	Education /License	Profile	Relevant Experience
<p><b>Justin Scheidel, PE</b> Quality Control</p>	<p>San Diego State University MS, Civil Engineering BS, Civil Engineering CA PE No. 82058</p>	<p>Justin Scheidel is a project manager with 21 years' experience specializing in water infrastructure design, wastewater treatment design, and construction management. Mr. Scheidel is responsible for detailed design and layout, civil/mechanical calculations and analysis, equipment selection, cost estimation, and development of plans and specifications. He is experienced in all phases of engineering, including planning, design, and construction</p>	<ul style="list-style-type: none"> <li>▪ San Luis Rey Water Reclamation Facility Major Improvements, City of Oceanside, California</li> <li>▪ Santa Maria Water Reclamation Plant Clarifier No. 4, Ramona Municipal Water District, California.</li> <li>▪ FE14-07 Primary Influent Channel Repairs, Orange County Sanitation District, Fountain Valley, California</li> <li>▪ San Vicente Third Stage Reverse Osmosis, the Ramona Municipal Water District, Ramona, California.</li> </ul>
<p><b>Agata Bugala, EIT, ENV SP</b> Project Engineer</p>	<p>The City College of New York BE, Environmental Engineering Engineer-in-Training No. 173501 Envision Sustainability Professional (ENV SP) No. 47181</p>	<p>Ms. Bugala has 3 years' professional experience as a water/wastewater engineer specializing in the design of water and wastewater treatment systems, including planning and process engineering.</p>	<ul style="list-style-type: none"> <li>▪ 4S Ranch WRF Headworks Screening System Improvements, Olivenhain MWD</li> <li>▪ Various Projects, Orange County Sanitation District</li> <li>▪ Separate Industrial Wastewater Reclamation Facility, City of Gonzales</li> </ul>
<p><b>Matt Stone, PE, SE</b> Structural Engineering <i>Kelsey Structural Group</i></p>	<p>University of California San Diego MS &amp; BS, Structural Engineering CA PE No. 78488 CA SE No. 6183</p>	<p>Matt Stone has over 13 years of project management and structural design work encompassing infrastructure, water, wastewater, and military projects. He specializes in assessing, designing, and retrofitting water and wastewater treatment, storage, and conveyance facilities.</p>	<ul style="list-style-type: none"> <li>▪ Dudek   City of Gonzales Industrial Water Reclamation Facility</li> <li>▪ Dudek   Westside Water Reclamation Plant; Victor Valley WRA</li> <li>▪ Dudek   City of Corona WRF-1A Aeration Improvements</li> </ul>

**KELSEY STRUCTURAL FEE SCHEDULE**

STRUCTURAL ENGINEERING SERVICE PROPOSAL

**APPENDIX C****RATE SCHEDULE**

SOCWA RTP Primary and Aeration Grating and Gates Replacement

April 2024

**HOURLY RATES**

Principal	\$235.00
Project Manager	\$210.00
Senior Engineer	\$190.00
Project Engineer	\$170.00
Assistant Engineer	\$150.00
CAD Technician	\$140.00
Administration	\$105.00

Hourly rates include provisions for normal overhead costs such as fringe benefits, office rental, utilities, insurance, clerical services, equipment, normal supplies and materials, and in-house reproduction services. Mileage shall be reimbursed at a rate equivalent to the current calendar year's IRS standard mileage rate. Rates shown are valid through December 31, 2024.

## 1.3.6 Conflicts of Interest

### ATTACHMENT D AFFIDAVIT CERTIFYING NO CONFLICTS OF INTEREST

The undersigned declares:

I am the Vice President of Dudek ("Proposer"), the party making the foregoing bid.

As a California public agency, SOCWA is subject to conflicts of interest rules under the Political Reform Act ("PRA") and California Government Code Section 1090 ("Section 1090").

The PRA prohibits a public official at any level of state or local government from making, participate in making, or in any way attempt to use their official position to influence a governmental decision in which the official has a financial interest. A public official has a financial interest in a decision if it is reasonably foreseeable that the decision will have a material financial effect on the public official, a member of the public official's immediate family, or on: (a) a business in which the public official has a direct or indirect investment worth \$2,000 or more; (b) real property in which the public official has a direct or indirect interest worth \$2,000 or more; (c) any source of income of \$500 or more received within 12 months prior to the time when the decision is made; (d) a business in which the public official is a director, officer, partner, trustee, employee, or has a management position; or (e) the donor of a gift to the public official of \$250 within 12 months prior to the time when the decision is made.

Section 1090 provides that public officials and public employees may not be "financially interested" in "any contract made by them in their official capacity."

By signing below, Bidder acknowledges that it (i) has considered persons with whom it has business relationships as to the potential for such persons to have a conflict of interest, (ii) has considered the requirements and provisions of the PRA and Section 1090, (iii) certifies that it does not know of any facts which constitute a violation, or should be further investigated to prevent a violation of those provisions, and (iv) agrees that Bidder will immediately notify SOCWA if it becomes aware of any such fact at a later date.

Any person executing this declaration on behalf of a Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on April 25, 2024 [date], at Encinitas [city], California [state].

Signature: \_\_\_\_\_



Bob Ohlund, P.E.

Title: Vice President

## 1.3.7 Non-Collusion Affidavit

### ATTACHMENT B NON-COLLUSION AFFIDAVIT

The undersigned declares:

I am the Vice President of Dudek, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on April 25, 2024 [date], at Encinitas [city], California [state].

Signature:  \_\_\_\_\_

Bob Ohlund, P.E.

Title: Vice President \_\_\_\_\_



## 1.3.8 Certifications

Each respondent must include the following signed certifications with its proposal:

1. Respondent certifies that it is not aware of any actual or potential conflict of interest that exists or may arise by executing the contract or performing the work that is the subject of this RFP.
2. Respondent certifies that it is willing and able to obtain all insurance required by the form contract included as Attachment C.
3. Respondent certifies that it has conducted a reasonable and diligent inquiry concerning the minimum and/or prevailing wages required to be paid in connection with the performance of the work that is the subject of this RFP and certifies that the proposed pricing includes funds sufficient to allow respondent to comply with all applicable local, state, and federal laws or regulations governing the labor or services to be provided.
4. Respondent acknowledges and agrees with all terms and conditions stated in the RFP, except as expressly noted below.
5. Respondent certifies that all information provided in connection with its proposal is true, complete, and correct.

Dudek respectfully requests the Authority's consideration of the following *exceptions* to the SOCWA Agreement for Professional Services.

Section 4.3: *Add a performance standard after the first sentence: "Consultant shall perform the services with the skill and care ordinarily exercised by members of the same profession operating under similar circumstances."*

Section 6.1: *Add the following after paragraph 6.1.3: "Notwithstanding the foregoing, with respect to any professional liability claim or lawsuit, this indemnity does not include providing the primary defense of SOCWA Indemnitees, provided, however, Engineer shall be responsible for SOCWA Indemnitees' defense costs to the extent such costs are incurred as a result of Engineer's negligence, recklessness or willful misconduct."*

# Appendix A

Resumes

# Michael Metts, PE

**PRINCIPAL IN CHARGE**

Michael Metts is a principal engineer and manager of Dudek’s engineering services with 40 years’ experience in civil engineering and is a registered engineer in the State of California. Mr. Metts’ engineering experience encompasses water, wastewater and recycled water engineering design, permitting, water resources planning, facility design, and construction management and assistance. He has provided project management and principal in charge services throughout the southwestern United States. Mr. Metts’ project experience encompasses the evaluation and expansion of existing facilities as well as the design of new facilities, allowing him to anticipate project challenges, to the benefit of his clients. He is committed to maintaining clear and open communication with the client, while maintaining control of the project budget and schedule, as well as proactively delivering cost-effective and innovative project solutions.



**Education**

University of Kentucky  
BS, Civil Engineering,  
1983

**Certifications**

Professional Civil  
Engineer (PE),  
CA No. 42586

**Professional Affiliations**

- American Public Works Association (APWA)
- American Society of Civil Engineers
- American Water Works Association
- California Water Environment Association
- National Society of Professional Engineers
- Water Environment Federation

## Project Experience

**Ramona Municipal Water District, Ramona, California. (14 years)** Provides district engineering and engineering department management services under the direction of the general manager. Services include evaluating and recommending improvements to the District's Engineering Department operations to maximize efficiency and streamline daily functions; and providing day-to-day management of RMWD engineering operations, including capital budget, water resources planning, support facilities planning, environmental services, quality control, construction, developer designed and constructed facilities, negotiating developer funded improvements and agreements, managing Legislative Code revisions, coordination with other RMWD departments and outside agencies, rate and fee studies assistance, urban water and stormwater management plans, mitigation programs, assessment district formation, evaluation and assistance with grant and loan applications, and attendance at board meetings.

## Wastewater Treatment

**Coastal Treatment Plant Tertiary System Upgrades, South Orange County Wastewater Authority, Laguna Niguel, California.** Principal engineer for design of upgrades to the 2.5 MGD Advanced Water Treatment facility, including repairs and recoating of the steel filter tanks and supports, replacement of filter media, pneumatic valves, and level transmitters for the Evoqua sand filters, a new horizontal centrifugal filter supply pump, the addition of an ultrasonic level sensor and VFDs for enhanced pumping control, replacement of chlorine contact tank vertical mixers, and replacement of the motor control center for the tertiary treatment system. The design phases was accelerated to meet a narrow plant shutdown window during the low water demand winter months.

**Influent Sewer Line Collapse – Emergency Services, South Orange County Wastewater Authority, Dana Point, California.** Served as the project manager and Principal in Charge for an emergency project where two force mains, 20-inch and 16-inch, collapsed due to extensive corrosion damage. Dudek evaluated the situation and quickly developed innovative solutions for reinstatement of the force mains. We coordinated with SOCWA and MNWD to correlate pump station constraints with need to shut down the force mains for repair. The solution involved transferring all flow from one force main to the other during limited duration low flow conditions in the middle of the night. Each force main was repaired in consecutive night periods to reinstate the force mains without damage to other portions of the Techite force mains due to increased pressure. The project also involved coordination of excavating the plant roadway to maintain scheduled deliveries of biosolids to the plant, operations that required extremely heavy truck transport within the construction zone.

**Design Services Emergency Replacement of Export Pipeline, South Orange County Wastewater Authority, Dana Point, California.** Served as project manager and provided field evaluation of emergency conditions, provided engineered solution to emergency situation, coordinated closely with client and contractor to develop engineering solution in limited schedule, provided quality control review of deliverables and engineering efforts, assisted in field during construction, acted as primary contact for client. The project involved the emergency repair of two 4-inch sludge transport pipelines within an ecologically sensitive area of Orange County. Development of the engineering repair documents was required under a very short time schedule. Dudek developed the repair document and worked closely with the contractor to get the repair completed within time constraints to avoid trucking of sludge through the adjacent heavily used park.

**Santa Maria WWTP Headworks Upgrade, Ramona Municipal Water District, California.** Principal in Charge for the design of a new headworks facility at the Santa Maria WWTP. The plant's existing influent lift station and downstream processes have been affected by rags and grit due to a lack of headworks screening and grit removal for the plant. The project included relocation of the influent truck sewer, a new headworks structure with influent screw pumps, mechanical screenings equipment, grit removal, and a new emergency generator. Various project challenges included construction phasing, large equipment and structures, utility relocation, and connections to existing facilities.

**4S Ranch WRF Digester Support and Oxidation Ditch Optimization, Olivenhain Municipal Water District, Encinitas, California.** Served as project principal engineer for engineering and operational support services at the 4S Ranch WRF to support ongoing efforts to optimize the oxidation ditch biological treatment process and digester performance. The District faced process upset conditions after transitioning from aerobic to facultative digestion and turned to Dudek for process support. With the Dudek team performed microscopic examination of the activated sludge, analyzed water quality, operational, and process control data, and developed interim operational recommendations to improve biological and digester performance, reduce sulfide off-gassing during dewatering, and maintain plant operations during upset conditions. Currently, Dudek is assisting the District in implementing process instrumentation and control improvements to optimize the oxidation ditch performance in an effort to reduce operating costs while producing higher quality treated effluent.

**Concept Level Facility and Process Review of 3A Wastewater Treatment Plant, Moulton Niguel Water District, Laguna Niguel, California.** Served as project principal engineer for the preparation of a concept-level facility and process review report for the plant to define the current and future capacity and process capabilities for the facility after the District assumed operations of the facility. Scope of work includes the review and consolidation of previous reports and studies, review and comments on the waste discharge requirements, and treatment process evaluation and facility constraints analysis.



# Justin Scheidel, PE

## QUALITY CONTROL

Justin Scheidel is a project manager with 21 years' experience specializing in water infrastructure design, wastewater treatment design, and construction management. Mr. Scheidel is responsible for detailed design and layout, civil/mechanical calculations and analysis, equipment selection, cost estimation, and development of plans and specifications. He is experienced in all phases of engineering, including planning, design, and construction. As a project manager, Mr. Scheidel is responsible for the tracking, monitoring, team delegation, deliverable quality assurance, engineering guidance, accounting, and client and subconsultant coordination associated with each project, including final stamp and signature of project plans and specifications.

## Project Experience

**San Luis Rey Water Reclamation Facility Major Improvements, City of Oceanside, California.** Served as project engineer for a series of improvement projects including developing plans for replacement of aeration basin influent and effluent gates, relining the aeration basin influent channel and demolition of abandoned piping and conduits for the 15.4-million-gallon-per-day treatment facility. Design involved working closely with operations staff to develop construction phasing plans that reduced bypass pumping costs while maintaining plant operations during construction. Project provides operations staff with treatment flexibility and optimization while reducing energy costs and facilitating maintenance operations.

**FE14-07 Primary Influent Channel Repairs, Orange County Sanitation District, Fountain Valley, California.** Served as project manager for the preparation of design plans and specifications for construction of expansion joint repairs for Channels 1 and 3 for the Primary Influent Channels at Plant 1.

**San Vicente Third Stage Reverse Osmosis, the Ramona Municipal Water District, Ramona, California.** Served as project manager for the development off a third stage reverse osmosis system for the San Vicente Water Reclamation Facility. The additional reverse osmosis stage increased recycled water production and reduced total brine volume up to 50%. Reduction in brine volumes significantly reduced plant operational costs associated with brine hauling and disposal costs. Final design included a fully automated third stage with separate instrumentation, control, and chemical facilities. Upgrades to the shade structure and equipment pads were included as part of final design.

**Santa Maria Water Reclamation Plant Clarifier No. 4, Ramona Municipal Water District, California.** Designed improvements to the one-million-gallon-per-day plant including addition of a 45-foot diameter secondary clarifier, flow splitter box modification, and recirculating aquaculture system and scum pumping changes. Responsible for detailed design development of yard piping, mechanical systems, and construction phasing allowing uninterrupted plant operation.



### *Education*

San Diego State  
University  
MS, Civil Engineering  
BS, Civil Engineering

### *Certifications*

Professional Civil  
Engineer (PE),  
CA No. 82058

### *Professional Affiliations*

American Society of  
Civil Engineers  
California Water  
Environment Association  
Water Reuse Association

**Sewer System Odor Control Study, City of Oceanside, California.** Aided in collection and interpretation of field data as part of an odor control study of the City of Oceanside collection system and treatment facilities. Collected data included ambient H<sub>2</sub>S concentrations, dissolved sulfides, differential sewer pressures, wastewater and manhole wall pH, and wastewater oxidation-reduction potential. Analyzed data to determine adequacy of existing odor control measures and develop recommendations for improvements.

**Simsbury Sewer Extension – Lift Station Abandonment Study and Design, City of Carlsbad, California.** Project included development of an adjoining lot, which prompted the evaluation of potential re-alignment of the existing sewer and abandonment of the existing pump station, creating a complete gravity sewer system. The preliminary evaluation of the project determined that the conversion was feasible by re-directing the sewer through the development. Drastic changes in elevations between the two sites prompted installation of the connection piping through the trenchless jack and bore method. Completion of the project eliminated the need for a pump station, reducing energy and maintenance costs.

**Lift Station Condition Assessment, Elsinore Valley Municipal Water District, Elsinore Valley, California.** Quality control reviewer for a comprehensive condition assessment of five of the district's aging sewer lift stations (20–49 years old) and associated force mains. A record data review, hydraulic analysis, and field inspection were required for each lift station to determine deficiencies and develop recommendations for a prioritized list of capital improvement projects to rehabilitate/replace the evaluated stations. Dudek recommended and strategically prioritized long-term improvement projects to stagger the full replacement of lift stations and force mains over the next 3–7 years.

**Solana Beach Pump Station Design, City of Solana Beach, California.** Served as lead engineer and project manager for the rehabilitation and upgrade of a 4.9-million-gallon sewer pump station within the San Elijo Lagoon. This pump station is the final tie between the collection systems of the City of Del Mar and Solana Beach and the San Elijo Water Reclamation Facility. The project included installation of a new 130,000 gallon emergency storage wetwell, two new duty wetwells, five new pumps including two low-flow submersibles and three high-flow dry pit submersibles, and all new electrical and controls equipment to operate the new pump station. Dudek provided support to the city from preliminary design through the completion of construction over the course of 5 years. Unique challenges included constructing the project within the environmentally sensitive lagoon and extracting, treating, and discharging groundwater through a National Pollutant Discharge Elimination System permit through the Regional Water Quality Control Board.

**Coast Pump Station and Force Main Rehabilitation Design and Construction Management, City of Encinitas, California.** Project manager/construction manager for this complete pump station overhaul. Rehabilitation included structural repairs of the existing wet well; replacement of the submersible pumps, including all mechanical, electrical, and instrumentation upgrades; and construction of a new valve vault, including isolation and bypassing equipment. The project also included installation of a 2-barrel 100% redundant 800-foot 4-inch force main under a lagoon and railroad tracks by horizontal directional drilling. The use of trenchless methods substantially reduced environmental issues, shortening the project design/permitting period and lowering construction costs.

**Reservoir Condition Assessment, Elsinore Valley Municipal Water District, Elsinore Valley, California.** Project manager for a condition assessment of seven potable and one non-potable storage reservoir for the district. The evaluation included structural, seismic, mechanical, cathodic protection, hydraulic, and hazardous materials assessment of these reservoirs. Based on the acquired information and assessment results, these reservoirs were ranked based on current condition. The reservoir ranking was used to assign a rehabilitation priority and recommended schedule of improvements. These recommended improvements were divided into immediate concerns, short-term concerns, and long-term concerns to help the district allocate resources to ensure immediate and long-term reliability of the water systems.

# Brian Robertson, PE, QSD

## PROJECT MANAGER

Brian Robertson has 17 years' project engineering experience in planning and design of infrastructure projects. Mr. Robertson has developed a reputation for delivering high-quality work on time and within budget. He has extensive experience in water, wastewater and drainage conveyance systems for cities and districts throughout Southern California and has received recognition for his work preparing detailed analysis, reports, drawings, specifications, and cost estimates. Mr. Robertson has developed an excellent rapport for seamless coordination with team members, various utilities, and essential governmental agencies. He brings a high level of professionalism while delivering project design packages with other services, including development review and staff augmentation.

## Project Experience

**WRF 1 Aeration System Improvements, City of Corona, California.** Project Manager for a new air piping supply system and new diffuser grid in aeration basins 1, 2, and 3 at WRF-1A. The improvements include relocation of the existing air headers with a new overhead alignment, including a pipe bridge and other overhead structural support systems. Design plans and sequence of construction specifications were developed to minimize construction cost and maintain plant operation and performance during installation of the new diffusers, along with miscellaneous aeration basin upgrades including replacement of the influent and effluent slide gates, mud valves, and supporting electrical, instrumentation and control facilities.

**Santa Maria WWTP Headworks Upgrade, Ramona Municipal Water District, Ramona, California.** Lead engineer for civil and mechanical design of a new headworks facility at the Santa Maria WWTP. The plant's existing influent lift station and downstream processes have been affected by rags and grit due to a lack of headworks screening and grit removal for the plant. Project includes relocation of influent truck sewer, new headworks structure with influent screw pumps, mechanical screenings equipment, grit removal, and new emergency generator. Various project challenges include construction phasing, large equipment and structures, utility relocation, and connections to existing facilities.

**Headworks Screening System Improvements, Olivenhain Municipal Water District, Encinitas, California.** Serves as a project engineer for condition assessment and improvements of the existing headworks facility including installation of new mechanical bar screen units, grit classifiers, odor control system, slide gates and influent channel improvements and lining. He has guided bypassing approach and will support through completion of the project.

**Digester Tank Improvements for La Salina Wastewater Treatment Plant, Oceanside Water Department, Oceanside, California.** Project Manager for improvements and rehabilitation of the primary and secondary digester tanks. Design was prepared for new above grade circulation lines from the heat exchangers to the digesters to address clogging, leaking, and access issues. Design also included digester tank rehabilitation and upgrades to the gas over-pressurization system to increase the system reliability and safety. Current responsibilities include engineering support during construction.



### Education

Cal Poly State University,  
San Luis Obispo  
BS, Civil Engineering,  
2006

### Certifications

California PE 77990  
Certified QSD

**Huston Creek WWTP Dewatering Building and Primary Clarifier, Crestline Sanitation District, Crestline, California.**

Project Engineer for the final design of a new two-story biosolids dewatering building, sludge holding tank, and primary clarifier for the District's 1 MGD Huston Creek WWTP. Project includes new structures, pumps, polymer feed system, odor control system, channels, electrical systems, and new emergency generator. Project site conditions required careful structural, civil, and mechanical design to support new facilities in challenging topographic conditions and other requirements to maintain plant operation during construction. His services included preparation of final design packages and engineering services during bidding and construction.

**Trickling Filter Valve Replacement at Plant No. 1, Orange County Sanitation District, Fountain, California.**

Project Manager for the design of a valve replacement for the piping system that connects the trickling filter clarifiers to the sludge and scum pump station. The valve is buried deep and surrounded by a net of utilities which required extensive alternatives development and evaluation, constructability reviews, and other design considerations to protect existing structures from settlement due to deep excavation and shallow groundwater conditions.

**Edinger Pump Station Rehabilitation Study, Orange County Sanitation District, Huntington Beach, California.**

Project Engineer responsible for assessment and development of planning studies to determine feasible options for the rehabilitation, replacement, relocation, or abandonment of the Edinger Pump Station. Project elements included assessment of geotechnical, structural, hydraulic, and mechanical conditions. Multiple alternative pump station sites and configurations were developed and evaluated extensively with engineering and operations staff.

**Highbury Pump Station Rehabilitation, Bureau of Engineering, Wastewater Conveyance Engineering Division, Los Angeles, California.**

Project Engineer for the rehabilitation design of the existing pump station. Tasks included utility research, site design, pump system hydraulics, evaluation of new pumping and equipment options, preparation of the preliminary design report, workshop presentations, and preparation of the Plans, Specifications, and Estimates (PS&E) package.

**Final Effluent Sampler and Building Area Upgrades (J-110), Orange County Sanitation District, Huntington Beach, California.**

Project Engineer for a new final effluent water quality sampler facility; improvements to the ocean outfall system; and other miscellaneous mechanical, electrical, and instrumentation improvements for Plant No. 2. Responsibilities included development of a work plan to implement inspection of the 120-inch Short Ocean Outfall and other associated large diameter yard piping and bulkheads. Responsibilities included coordination with subconsultants and operations staff, evaluation sampling and metering equipment options, evaluation of pipeline rehabilitation alternatives, preparation of civil site and mechanical design for bid packages.

**Farmersville Wastewater Treatment Plant Design, City of Farmersville, California.**

Project Engineer for a new wastewater treatment plant, including the following elements: headworks, mixing chamber, aeration basins, clarifiers, holding tanks, return activated sludge pump station, digester tanks, and a solids handling building. Responsibilities included the design and preparation of drawings for the influent pump station, yard piping, and other conveyance design elements.

**Planning Area 18 North Capital Improvement Facilities, Irvine Community Development Company (ICDC), Irvine, CA.**

Project engineer for the capital facilities associated with the ICDC Planning Area 18 North development project, in coordination with the Irvine Ranch Water District (IRWD). Facilities design included 12-inch domestic water pipelines; 6-inch, 8-inch, 24-inch, and 36-inch reclaimed water pipelines; and turnout improvements. This project included close coordination with IRWD and ICDC to accomplish the tight project schedule and maintain the budget.



# Gregory Guillen, PhD, PE

## PROCESS ENGINEER

Gregory Guillen is a chemical and environmental engineer with 11 years' experience focusing on water and wastewater treatment. Dr. Guillen's education covered the fundamentals of chemical and environmental engineering, with an emphasis on water and wastewater treatment. His graduate work focused on advanced membrane materials and processes for separations, including those found in water and wastewater treatment. Dr. Guillen has authored several peer-reviewed papers in the field of desalination and membrane filtration, holds multiple patents for membrane formation, and has lectured in the Department of Civil and Environmental Engineering at University of California, Los Angeles.

## Project Experience

**Santa Maria WWTP Headworks Upgrade, Ramona Municipal Water District, California.** Lead process engineer for the design of a new headworks facility at the Santa Maria WWTP. The plant's existing influent lift station and downstream processes have been affected by rags and grit due to a lack of headworks screening and grit removal for the plant. The project included relocation of the influent truck sewer, a new headworks structure with influent screw pumps, mechanical screenings equipment, grit removal, and a new emergency generator. Various project challenges included construction phasing, large equipment and structures, utility relocation, and connections to existing facilities.

**4S Ranch Water Reclamation Facility Headworks Screenings System Improvements, Olivenhain Municipal Water District, Encinitas, California.** Lead process engineer for the design of a new headworks improvements project, including replacement of mechanical screens, a grit classifier, odor control system improvements, channel rehabilitation, slide gate replacements, building structural modifications, and new instrumentation and controls. Key design considerations included working around a tight building and working space, which led to maintenance of plant operation and construction phasing challenges. The result is an improvement in screenings performance and reliability, as well as the replacement of corroded and obsolete process equipment.

**Woods Valley Ranch Water Reclamation Facility Phase 2, Valley Center MWD, California.** Dr. Guillen designed secondary, tertiary, and disinfection processes for the Woods Valley Ranch Water Reclamation Facility Phase 2 expansion. Secondary wastewater treatment consists of an Aero-Mod extended aeration system capable of full nitrification and denitrification. Tertiary treatment consists of coagulation, flocculation, and cloth disk filters. Dr. Guillen developed a tracer study protocol in coordination with the California Department of Public Health that will be used to recertify the existing chlorine contact basins to determine their ultimate capacities. The water reclamation facility will continue to produce Title 22 quality effluent.



### *Education*

*University of California,  
Los Angeles*

*PhD, Civil Engineering  
MS, Civil Engineering*

*University of California,  
Riverside*

*BS, Environmental  
Engineering*

### *Certifications*

*Professional Civil  
Engineer, CA No. 83897*

### *Professional Affiliations*

*California Water  
Environment Association  
WateReuse Association*

**Bay Bridge Pump Station Replacement Odor Control Facility, Orange County Sanitation District, Newport Beach, California.** Dr. Guillen evaluated multiple gas- and liquid-phase hydrogen sulfide (odor) treatment technologies for implementation at the new Bay Bridge Pump Station. Calcium nitrate, magnesium hydroxide, and carbon scrubbers were selected for on-site and downstream odor control based on the results of a life-cycle model analysis. Dr. Guillen provided preliminary design of the odor control facility, including chemical demands, storage requirements, preliminary site layouts, and construction cost estimates.

**Pressurization and Odor Control Study, Orange County Sanitation District, Newport Beach, California.** Dr. Guillen investigated the causes of odor, pressurization events, and explosive gases in seven Orange County Sanitation District pump station wet wells in Newport Beach. Dr. Guillen developed protocols and performed field monitoring of hydrogen sulfide and differential pressure in these wet wells. A technical memorandum was developed that identified the causes of the observed issues and made recommendations on wet-well improvements.

**Pump Station Pressurization Improvements, Orange County Sanitation District, Newport Beach, California.** Dr. Guillen provided preliminary design of odor and pressurization mitigation improvements at six Newport Beach pump stations. The improvements included adding passive carbon scrubbers at each pump station. The scrubbers allowed treated air to exit and enter the wet wells without emitting odors or causing pressurization of the wet wells. A ferrous chloride storage and dosing facility was also designed at 15<sup>th</sup> Street Pump Station to provide downstream liquid phase hydrogen sulfide removal.

**Odor Control Analysis, Olivenhain MWD, Encinitas, California.** Dr. Guillen helped evaluate multiple liquid- and gas-phase hydrogen sulfide treatment systems for Olivenhain MWD's Del Dios force main. Recommendations were made to the District based on treatment efficacy and a life-cycle cost analysis.

**Separate Industrial Treatment Concept Alternatives Project, City of Gonzales, California.** Dr. Guillen served as lead treatment engineer in the evaluation of industrial treatment alternatives. Projected industrial wastewater flow generation and water quality, water reuse opportunities, and effluent water quality requirements. Provided conceptual industrial WWTP locations, layouts, and cost estimates.

**Wastewater Treatment and Collection System Master Plan, Crestline Sanitation District, California.** Dr. Guillen served as lead treatment engineer for the Wastewater Master Plan for the Crestline Sanitation District. Utilized a series of workshops to facilitate a COFA to identify the most critical and high-risk failure scenarios at all three of the District's WWTPs and two lift stations, as well as the root cause of those failures. Additionally, Dr. Guillen performed a thorough process evaluation on each unit process of all three of the District's WWTPs to determine individual process capacity and performance in comparison to design criteria and industry standard ranges. The project culminated in a comprehensive list of capital improvement projects, prioritized by risk and paired with available funding opportunities.

**Ventura Water Reclamation Facility Process Evaluation and Capital Improvement Plan, City of San Buenaventura, California.** Dr. Guillen assisted in the Failure Mode and Effects Analysis workshops with Ventura Water Reclamation Facility staff. The workshops identified unit processes within the water reclamation facility, identified their modes of failure, and scored the criticality of those failures. The Failure Mode and Effects Analysis process, in conjunction with the water reclamation facility treatment process analysis, identified constraints within the facility and helped develop the City's Capital Improvement Plan.

# Agata Bugala, EIT, ENV SP

**PROJECT ENGINEER**

Agata Bugala (*ah-GATA boo-GA-LA; she/her*) is a project engineer with 3 years' professional experience as a water/wastewater engineer specializing in the design of water and wastewater treatment systems, including planning and process engineering. Ms. Bugala's technical skills include aeration process modeling and energy optimization in BioWin, report and proposal preparation, drawing preparation in AutoCAD, and bench-scale and pilot-scale studies.



## Relevant Previous Experience

**Consequence of Failure Analysis, South Orange County Wastewater Authority, Dana Point, California.** Project engineer for the preparation of a Consequence of Failure Analysis for the South Orange County Wastewater 6.7-million-gallon-per-day coastal treatment plant. Assisted in site visits and workshops to identify the most critical and high-risk failure scenarios at the city's WWTP. Evaluated and prepared a report describing short-term and long-term WWTP upgrades, maintenance, and replacement components.

**4S Ranch Water Reclamation Facility Headworks Screenings System Improvements, Olivenhain Municipal Water District, Encinitas, California.** Project engineer for the design of a new headworks improvements project, including replacement of mechanical screens, grit classifier, odor control system improvements, channel rehabilitation, and slide gate replacements.

**Industrial Wastewater Treatment Facility, City of Gonzales, California.** Project engineer for the design of a new 1-million-gallon-per-day industrial wastewater treatment facility. The new plant includes an influent pump station, headworks with screenings and grit removal, aerated treatment ponds, and effluent infiltration basins. Performed process calculations, wastewater treatment plant design (e.g., process flow diagrams), and cost estimates.

**Consequence of Failure Analysis, Moulton Niguel Water District, Laguna Niguel, California.** Project engineer for the preparation of a Consequence of Failure Analysis for the Moulton Niguel Water District. Assisted in site visits and workshops to identify the most critical and high-risk failure scenarios at the city's WWTP. Evaluated and prepared a report describing short-term and long-term WWTP upgrades, maintenance, and replacement components.

**La Salina Wastewater Treatment Plant Digester Rehabilitation, City of Oceanside, California.** Project engineer for the design of anaerobic digester cleaning and rehabilitation for both the primary and secondary digesters at the La Salina Wastewater Treatment Plant (WWTP) in Oceanside. The scope of work included digester cleaning specifications; replacement of blocked heat exchanger piping and valves; replacement of leaking overflow piping; replacement of corroded access manway, cover, bolts, and nuts on the digester roof; and replacement of gas protection equipment, including all piping, pressure safety valves, flame arrestor, flame trap, and valves.

**Education**

The City College of New York  
BE, Environmental Engineering, 2018

**Certifications**

Engineer-in-Training (EIT), No. 173501

Envision Sustainability Professional (ENV SP) No. 47181

**Professional Affiliations**

Santa Ana River Basin Section, Director

Water Environment Association, Active Member

**City of Redlands Master Plan, Redlands, California.** As project engineer, performed full-scale capacity assessment of the existing equipment of major unit operation processes. Evaluated the existing system to identify key performance parameters of the WWTP and recommend potential ways to increase operations efficiency while reducing electrical costs of the facility, including power costs associated with pumps, blowers, and cogeneration.

**Nano-Aeration Demonstration Testing, Municipal Wastewater Treatment Plant, City of Gonzales, California.**

Assisted in the evaluation of nano-aeration technology (NanO<sub>2</sub>) at the City of Gonzales WWTP. Prepared a conceptual design for a NanO<sub>2</sub> system on how to remove nitrogen in the efficient and cost-effective way rather than traditional biological treatment processes.

**WWTP Capacity and Condition Assessment, City of Banning, California.** Performed full-scale field condition and capacity assessment of the existing equipment of major unit operation processes (i.e., pumps) and pipes throughout the WWTP using a portable ultrasonic flow meter. Evaluated and prepared a report describing short-term and long-term WWTP upgrades, maintenance, and replacement components.

**Nitrogen Removal Feasibility Study, City of Banning, California.** Assisted with the design and evaluation of the wastewater treatment systems for nitrogen removal to achieve California Code of Regulations Title 22 requirements. Performed cost analysis for the secondary treatment including trickling filters, conventional activated sludge, MBR, moving bed biofilm reactor, and integrated fixed-film activated sludge.

**Food and Beverage Facility, Wastewater Treatment Feasibility Study, Anaheim, California.** Assisted with evaluation, design (process flow diagrams and site layouts), preparation of life cycle cost estimates, and recommendation of wastewater treatment systems to reduce surcharge fees. Evaluated liquid and solid treatment components such as sequencing batch reactor, upflow anaerobic sludge blanket, anaerobic membrane bioreactor, dissolved air floatation, centrifuge, screw press, and belt filter press.

**Wastewater Treatment Feasibility Study, Manufacturing Wastewater Facility, Ohio.** Assisted in improving performance of an existing dewatering system for high total dissolved solids and high pH. Evaluated the feasibility of various solid and liquid separation treatment alternatives. Assisted in performing process calculations, preliminary construction and annual operations and maintenance costs of equalization, and evaluating filtration, dewatering, and pH adjustment systems.

**Wastewater Treatment Feasibility Study, Danone Facility, Virginia.** Assisted with the evaluation of treatment alternatives and preliminary design to improve an on-site wastewater treatment system and reduce incoming high organic loading rates generated from a dairy production line. Drafted process flow diagrams and site layouts for dissolved air floatation system and upflow anaerobic sludge blanket system. Prepared sections of the final technical memorandum.

**Plant Optimization, Water-Energy-Food Nexus Project, Germany and New York.** Assessed the feasibility of implementing demand response strategies and integrating on-site renewable energy sources as an alternative to grid-supplied electricity for the operation of WWTP in Germany and New York. Modeled and optimized energy consumption at the Haldenmühle Water Resource Recovery Facility, Stuttgart, Germany.

**Co-Digestion Evaluation, Newtown Creek Water Resource Recovery Facility, New York.** Evaluated how including additional solid-waste streams impacted digester egg performance. Performed biomethane potential tests to evaluate production rates.





## **Matt Stone, PE, SE**

### **Senior Project Manager**

Mr. Stone is a currently licensed California SE with over 13 years of project management and structural design work encompassing commercial, infrastructure, water, wastewater and military projects. He has performed many

complex structural and seismic designs for new and existing buildings utilizing the latest design standards and philosophies. His work has included the preparation of structural drawings, specifications, and

calculation packages, project coordination and management, technical report writing, cost estimating and construction support services. He specializes in the assessment, design and retrofit of water and wastewater treatment, storage and conveyance facilities.

### **Education/Professional Registration**

BS, Structural Engineering, 2008, UCSD

MS, Structural Engineering, 2009, UCSD

Civil Engineer in California, 2011, No. 78488

Structural Engineer in California, 2014, No. 6183

## **Relevant Project Experience**

### **City of Corona WRF-1A Aeration Improvements – Corona, CA – Project Manager – Kelsey Structural – 2023**

Mr. Stone provided the structural design for a series of aeration pipe supports at the City of Corona's existing WRF-1A treatment plant. Design includes various custom pipe supports for 20" and 12" diameter stainless steel air piping including cantilever frames and kicker supports at the existing Aeration Basins and a 25' long pipe bridge spanning over an existing access road. Modifications at the existing Blower Building were required to accommodate the new piping penetrations through the CMU walls. Design considerations for expansion couplers, large thrust loads, existing structure loading and anchorage required detailed coordination with the client and design team to help ensure minimal impacts to the existing facility and operations.

### **VVWRA Septage Receiving Stations – Victorville, CA – Project Manager – Kelsey Structural – 2023**

Mr. Stone is currently providing the structural design of two new septage receiving stations to be constructed at the Victor Valley Wastewater Reclamation Authority's (VVWRA) Westside Water Reclamation Plant (WWRP). Due to long lead times in the procurement of precast concrete structures, VVWRA has requested the buried vault structures be constructed from cast-in-place concrete to accelerate the overall schedule. Structural design consists of two 50'L x 8'W x 8'H buried rectangular concrete vaults to be utilized for unloading of septic vehicles into the WWRP treatment system. The structures are designed to resist H-20 vehicular loading on the roof slab and associated wall surcharge pressures and include interior weir walls with debris screening to capture any large debris prior to conveyance to the existing Septic Equalization Tank. Engineering services being provided as part of the project include the development of structural drawings, specifications, calculations and opinion of probable construction cost.

### **WMWD Magnolia Avenue Interconnection – Riverside, CA – Project Manager – Kelsey Structural – 2023**

Mr. Stone provided the structural design of the new Magnolia Avenue Interconnection Vault for Western Municipal Water District. The vault consisted of a below-grade, cast-in-place rectangular concrete vault with stairway and custom hatch access located in a roadway median along Magnolia Avenue. The structure was designed for H20 vehicular loading, lateral wall surcharge, high seismic forces and required precise reinforcing layout in the top slab to accommodate the oversized access hatch and pump hatch penetrations. The design required minimized foundation bearing pressures and small foundation slab footprint to prevent surcharge and disturbance of adjacent storm drain vaults and pipelines. Tight reinforcing spacing was utilized to minimize temperature, shrinkage and service loading cracking to help ensure the longevity of the vault structure.

### **CVWD Lift Station 55-11 Capacity Upgrade – Mecca, CA – Project Manager – Kelsey Structural – 2023**

Mr. Stone provided the structural design for the Coachella Valley Water District Lift Station Capacity Upgrade project located in Mecca, CA. The project included preliminary and final design for the complete replacement and upgrade of the lift station's mechanical and electrical systems and utilized the existing wet well at the site for emergency storage. Structural design included a new 16' diameter x 35' deep precast concrete wet well, new premanufactured electrical building and foundation, odor reducing station with dry-media bed concrete basin, and an emergency generator with custom aluminum platform access. The precast wet well utilized the largest diameter precast sections available in the United States and require two semi-circular precast sections to be joined in-field with a grouted connection. Additional considerations for shallow groundwater and flood plain elevations required the design of a large cast-in-place mat foundation for the wet well to resist buoyancy and uplift forces.

### **USIBWC SBIWTP Assessment and Facility Planning – San Diego, CA – Structural Engineer – Kelsey Structural – 2023**

Mr. Stone served as the Lead Structural Engineer for the condition assessment of over 120 structures at the USIBWC South Bay International Wastewater Treatment Plant (SBIWTP) located in San Diego, CA. The assessment involved fast-paced field investigations, which documented the structural conditions of various primary, secondary and support facilities throughout the plant.



Condition scores were assigned to each structural asset with associated improvement recommendations, prioritization and cost-estimate review documented in a structural technical memorandum. The assessment identified several key structures with severe deterioration requiring repairs in the immediate future to facilitate the future expansion of the plant.

## **EMWD Ellis Tank Assessment and Repair – Perris, CA – Project Manager – Kelsey Structural – 2022**

Mr. Stone provided the structural assessment and repair design for Eastern Municipal Water District's (EMWD) existing 0.26 MG Ellis Tank. The reservoir is an AWWA D100 welded steel reservoir that was in the process of being recoated when Kelsey Structural was brought in to perform an assessment of the existing structure once old coatings were removed. Mr. Stone discovered severe deterioration of the roof framing system and column supports, which halted construction work and required an emergency repair design of a new roof framing system and strengthening of the existing structure. Expedited design work helped minimize construction delays and efficient detailing allowed for quick repair of the tank roof structure.

## **City of Poway Clearwell Bypass, Poway, CA – Project Manager – Kelsey Structural – 2022**

Mr. Stone provided the structural design of a new pump station, pipe gallery retrofits and AWWA D103 bolted steel tank review for the City of Poway's Clearwell Bypass project. Recent failures of the existing clearwell have prompted replacement of the aging concrete storage basin, requiring temporary bypass of all treatment plant water while the new clearwells are constructed. To implement this bypass, Kelsey Structural has provided a new slab-on-grade pump station design and retrofits to an existing pipe gallery structure to facilitate bypass pumping and new piping to the temporary steel storage tanks. Structural design has included reinforced concrete slab-on-grade with deepened perimeter footings to accommodate the site slope, concrete pedestal pipe supports, and retrofit concrete wall construction requiring demo and replacement of an existing below-grade vault wall.

## **City of Gonzales Industrial Water Reclamation Facility – Gonzales, CA – Project Manager – Kelsey Structural – 2022**

Mr. Stone is provided the structural design of a new Industrial Water Reclamation Facility for the City of Gonzales. Structural design is being provided for multiple treatment facilities including an 1,800 sqft. concrete-masonry unit Operations Building, below grade reinforced concrete Wet Well and Pump Station, Headworks facility, Grit Chamber, Blower Building and miscellaneous site structures and equipment foundations. Extremely poor soil conditions at the site coupled with high groundwater and flood plain required all structures to be supported on mat foundations capable of spanning voids beneath the structures and resisting large differential settlements that may occur due to liquefaction during seismic events.

## **OMWD Neighborhood No.1 Sewer Pump Station – 4S Ranch, CA – Structural Engineer – Kelsey Structural – 2021**

Mr. Stone provided structural engineering design services for a new pump station and electrical building to be constructed in the 4S Ranch neighborhood of San Diego, CA. The project included structural design of a below-grade, rectangular reinforced concrete pump station and an above grade CMU electrical building with steel framed roof structure. The pump station measured approximately 28'x27' and is buried approximately 25' below grade. Design challenges included HS-20 vehicular loading at the long-span roof slab which also supported one of the walls of the CMU electrical building. A heavily reinforced concrete beam was required to support the roof structure and required loads.

## **JBLTP Digester 1 And 2 Manway Improvement Project – Dana Point, CA – Project Manager – Kelsey Structural – 2021**

Mr. Stone provided the structural design of four retrofit access manway doors and strengthening of existing Digesters at the existing SOCWA J.B. Latham Treatment Plant. The retrofit design required sawcutting the existing circular reinforced concrete Digester walls to provide new and enlarged access penetrations to improve ventilation and accessibility during maintenance. Fiber wrap strengthening of the existing structure was required to accommodate the new penetrations and resist hydrostatic and seismic hoop forces in the walls concentrated around the openings.

## **EVWD 18 Reservoir Structural and Seismic Analysis – San Bernardino, CA – Project Manager – Kelsey Structural – 2021**

Mr. Stone performed the structural and seismic analysis of a total of 18 existing reservoirs including AWWA D110 prestressed concrete and AWWA D100 welded steel reservoirs for East Valley Water District. Analysis of the reservoirs' essential structural elements was performed to identify critical code deficiencies and vulnerabilities. Critical steel reservoir analysis included tank shell thickness, anchorage and stability, ringwall foundations and sloshing/freeboard requirements. Critical prestressed reservoir analysis included concrete core walls, vertical and horizontal prestressing, seismic cables, two-way concrete roof slab, columns and foundations. A summary report was developed for each of the reservoirs identifying notable deficiencies with recommendations for possible retrofits, strengthening and lowered operating water levels, which would mitigate the code deficiencies and improve structural performance and reliability.





# DUDEK

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### 1.3.5 Pricing

Dudek states that this proposal and pricing information will remain in full force and effect for one-hundred and twenty (120) days after the submission deadline of April 25, 2024. The prices quoted shall include all costs required to complete the work requested by this RFP including, but not limited to, any delivery, hauling, handling or disposal fees, tax, insurance, bonds and permits for the contract period.

The Kelsey Structural fee is based on 250 hours billed according to the Kelsey Rate Schedule found on page 18.

		PIC QA/QC		Process/Odor Engineer	Project Engineer	CAD Designer	Admin	TOTAL DUDEK	DUDEK LABOR	Kelsey Structural	OTHER DIRECT COSTS	TOTAL FEE
Project Team Role:		M. Metts J. Schedel		B. Robertson	G. Guillen	A. Bugala	N. Hunter	M. Kinney		M. Stone		
Team Member:										Fee		
Billable Rate :		\$280	\$255	\$255	\$210	\$200	\$150	HOURS	COSTS			
<b>Task 1</b>	<b>Project Management and Coordination</b>											
	Project Management											
	Monthly Progress Reports, Invoices, Administration		20					20	40			
	Monthly Progress Meetings (3 In-Person)		16						16			
	Workshop Meetings (2 In-Person)		8	4	12				24			
	<b>Subtotal Task 1</b>		<b>44</b>	<b>4</b>	<b>12</b>			<b>20</b>	<b>80</b>			
<b>Task 2</b>	<b>Data Collection and Document Review</b>											
	Review As-builts and Previous Studies		4	4	12	12			32			
	Site Investigation		4	4	8	8			24			
	<b>Subtotal Task 2</b>		<b>8</b>	<b>8</b>	<b>20</b>	<b>20</b>			<b>56</b>			
<b>Task 3</b>	<b>Design Workshop</b>											
	Bypassing/Sequencing/Implementation Concept Plan	2	8	8	8				26			
	Preliminary Design Memo	2	4	4	12				22			
	<b>Subtotal Task 3</b>	<b>4</b>	<b>12</b>	<b>12</b>	<b>20</b>				<b>48</b>			
<b>Task 4</b>	<b>50% Design Submittal</b>											
	Plans	2	8	8	48	90			156			
	Specifications (Updated Technical and Division 1)	2	8	8	24				42			
	Cost Estimate	2	2		8				12			
	<b>Subtotal Task 4</b>	<b>6</b>	<b>18</b>	<b>16</b>	<b>80</b>	<b>90</b>			<b>210</b>			
<b>Task 5</b>	<b>90% Design Submittal</b>											
	Drawings	2	8	8	32	50			100			
	Specifications	2	8	8	16				34			
	Cost Estimate	2	2		4				8			
	Constructability Review and Site Walk	4	4	4	4				16			
	<b>Subtotal Task 5</b>	<b>10</b>	<b>22</b>	<b>20</b>	<b>56</b>	<b>50</b>			<b>158</b>			
<b>Task 6</b>	<b>Bid Set Submittal</b>											
	Drawings		4		8	24			36			
	Specifications		4		8				12			
	Cost Estimate		2		4				6			
	<b>Subtotal Task 6</b>		<b>10</b>		<b>20</b>	<b>24</b>			<b>54</b>			
<b>Total Hours and Fee</b>		<b>20</b>	<b>134</b>	<b>80</b>	<b>248</b>	<b>204</b>	<b>20</b>	<b>710</b>				